

**Comparison Between
MIL-STD-209J and MIL-STD-209H**

MIL-STD-209J Paragraph #	MIL-STD-209H Paragraph #	Reason for Change
1.2 Application.	1.2 Application.	209J states that this standard applies to commercial and modified commercial equipment. This is congruent with the different types of acquisition programs.
1.3.1 Provision nomenclature.	1.3.1 Slinging and tiedown provisions	209J abolishes type classifications and instead and uses the terms lifting provisions, equipment tiedown provisions, multipurpose provisions, cargo bed tiedown provisions, flatbed/flatrack cargo tiedown provisions, and large cargo tiedown provisions. We found that type classifications were cumbersome to use and were not descriptive of the function of the provision. Therefore, we have used instead a more descriptive name for each type of provision in 209J. We also added large cargo tiedown provisions for items that have a payload capability greater than 5,000 lb. Large cargo tiedowns are required to ensure that a heavy single item of equipment can be tied down in a cargo bed using only four provisions.
1.3.2 Equipment types.	1.3.2 Equipment types.	The equipment type definitions were redefined in 209J to only two types of equipment, type I and II. Basically, all equipment whether developmental, non-developmental, or modified commercial equipment is Type I equipment. We changed the type classifications because there was little difference between types I and II and between types III and IV equipment in 209H.
3.1 Lifting provision.	3.1 Slinging provision(class 1).	All references to "slinging" provisions have been changed to "lifting" provisions throughout the document. For 209J, the reference to a nonremoveable shackle or ring as part of the provision has been dropped because shackles are not allowed in 209J. We found that shackles were not really "nonremoveable" and tended to get lost or misplaced easily.
3.2 Equipment tiedown provision.	3.2 Equipment tiedown provision (class 2)	For 209J, the reference to a nonremoveable shackle or ring as part of the provision has been dropped because shackles are not allowed in

		209J. Shackles are not really "nonremoveable" and tend to get lost or misplaced easily.
3.16 Equipment.	None.	This definition was added to 209J for clarity and understanding.
3.18 Container spreader bar.	None.	This definition was added to 209J for clarity and understanding.
3.19 External air transport weight (EATWT).	None.	This definition was added to 209J for clarity and understanding.
4.1.1 Number.	4.1.1 Number.	For 209J, all types of equipment are required to have four provisions for lifting and four provisions for tiedown. This requirement is necessary because container spreader bars or other lifting sling sets are typically equipped with only four locations for lifting. Likewise, because of limited tiedown devices on railcars, equipment must be capable to being tied down with only four provisions.
4.1.2.1.a	4.1.2.1.a	The requirement is to maintain at least 1 inch of clearance between the lifting or tiedown chains and the equipment. If this is not feasible, the area of the equipment that comes in contact with the chains must be either tested or analyzed using CAE structural analysis to show that that affected area has the strength to withstand the loads that will be applied.
4.1.2.1.d	None.	The requirement that the orientation of the provision be such that an attaching device (hook), of the proper capacity, not be in contact with any part of the item being lifted was added to 209J. This requirement was added to ensure that when the appropriate sized hook is used for lifting, the equipment would not be damaged.
4.1.2.1.e	None.	The requirement that the height of the provisions be 6 feet or less, unless an integral means for reaching the provisions, was added to 209J. Provisions are sometimes so high that shippers cannot reach them without climbing on top of the equipment. This is an unsafe situation and can be avoided with this new requirement. Also, tiedown chains are typically only about 10 feet long.
4.1.2.2.b	None.	The requirement for the equipment to be lifted

		with an equal length sling assembly was added to 209J. This is a major change from 209H where lifting was assumed to be with slings that would yield a level lift. Level lifts are not representative of how equipment is lifted in the field. In most field situations, lifts are accomplished with equal length slings. 209J now reflects what is actually done in the field.
4.1.2.2.c	None.	The requirement to place the provisions in such a location as to yield a nearly level lift when lifted with equal length slings was added to 209J. Level lifting is the preferred scenario, but it is not a hard and fast requirement. The equipment should be designed to withstand a lift with equal length slings, whether level or not.
4.1.2.2.d	4.1.2.2.c	The requirement to maintain a 1-inch clearance between the slings legs and the equipment is retained, however this requirement must be met when being lifted with an equal length sling assembly and when being lifted by a container spreader bar (and everything in between these two). The provisions on some equipment are oriented such that they are not very conducive to being used with container spreader bars. Container spreader bars are common at large ports and equipment must be capable of being lifted by these without damage.
4.1.2.2.e	4.1.2.2.b	The requirement to not exceed a 24 foot apex height was retained, however this requirement must be met after all the other requirements in this paragraph are met. Some contractors had mistakenly thought that they could use any sling lengths as long the apex height was less than 24 feet.
4.1.2.3	4.1.2.3	The location requirements in 209J have been changed so that tiedown legs can be placed anywhere from vertically downward to horizontal in the elevation view (instead of to just 45°). This requirement was broadened because we found there were situations that required tying down horizontally. The requirement that the provisions swivel 360° and rotate 180° has been dropped. If the location requirements are adhered to, then these requirements are not necessary. The requirement

		that tiedowns be used in only longitudinal direction or one lateral direction has been added to 209J. Contractors have habitually tried to have more than one tiedown chain coming off a provision. This is not allowed because the tiedown arrangements should have minimal complexity. Soldiers are trained to tie down equipment using each provision in only one longitudinal direction and one lateral direction and the soldiers should not be expected to do otherwise.
4.2 Surface of provisions.	4.1.4 Classes 1, 2, 3, 4, and 5 provisions' surface.	The requirement for the material edges to be rounded and chamfered has been quantified in 209J.
4.3 Shackles.	4.2 Shackles.	Shackles are disallowed in 209J. We found that shackles are habitually missing on equipment, requiring that additional shackles be purchased to enable the item to be lifted and tied down. Hard mounted provisions are a much better alternative since they always with the equipment.
4.5 Removable provisions.	4.4 Removable provisions.	Removable provisions are prohibited in 209J. The requirement in 209H was that provisions that could be removed without the use of tools were not allowed. However, even these types of provisions are habitually missing so the requirement in 209J prohibits all removable provisions. Prohibition of removal for secondary use remains unchanged.
4.6.1.2 Large cargo tiedown provisions.	None.	A requirement for large cargo tiedown provisions for items that have a payload capability greater than 5,000 lb has been added to 209J. Four large cargo tiedowns are required to ensure that a single heavy item of equipment can be tied down in a cargo bed using only these provisions.
4.9 Spreader bars.	None.	Spreader bars are discouraged in 209J. This paragraph further clarifies the requirements that a spreader bar must meet to be 209J compliant. Spreader bars must be integral to the design of the equipment or stowage locations must be provided, the spreader bars must be basic issue item equipment, and the openings on the

		spreader bars must meet the "D" dimension of figure 5.
4.10 Computer aided engineering (CAE) structural analysis.	None.	The requirement to use CAE tools to analyze the structural integrity of the provisions prior to any testing is required in 209J. Either the contractor or MTMCTEA will perform this structural analysis.
4.11 Deviations.	None.	Deviations to the requirements in 209J must be identified and resolved as early as possible. The request for a deviation, at the latest must be included as part of the data package submitted for source selection. Approval of any deviations to the requirements in 209J are required prior to contract award.
5.1.1 Lifting provisions.	5.1.1. Class 1 slinging provisions.	The requirement that the lifting provisions meet the strength requirements when being lifted with equal length slings and when being lifted with a container spreader bar (and everything in between) is a change in 209J.
5.1.1.2.a	5.1.1.2.a	The requirement that the lifting provisions meet the crane design limit load of 2.3 when being lifted with equal length slings and when being lifted with a container spreader bar (and everything in between) is a change in 209J.
5.1.2 Equipment tiedown provisions.	5.1.2 Class 2 tiedown provisions.	For clarity and ease of understanding, a table showing the load requirements for equipment tiedowns was added to 209J. Instead of stating that the distribution of the load shall be based on the tiedown procedures to meet MIL-STD-810, 209J spells out that the distribution of the load shall be based on using two provisions in both longitudinal directions, two provisions in both lateral directions, and four provisions in the vertical direction. This is essentially what is required to meet the tiedown procedures of MIL-STD-810.
5.1.2.1 Option for equipment weighing more than 100,800 pounds.	None.	An option for equipment weighing more the 100,800 lb has been added to 209J that allows for two openings per provision, in lieu of just one opening per provision. For the size opening that is required for heavy equipment, it is sometimes hard to meet the strength requirements with just one opening.
5.1.4.a, Table II	5.1.4.a, Table I	A note has been added to 209J to clarify that the

		load carrying capacity of the cargo tiedowns does not have to match the load carrying capability of the vehicle.
5.1.4.c	None.	The requirement that a load equal to the load in Table II be applied to the cargo tiedown provisions using 2-inch banding was added to 209J. This is to verify that the provision can not only accept banding, but be subjected to the loads of Table II without the banding tearing.
5.1.4.d	None.	Large cargo tiedown provisions (new to 209J) are required to carry their proportionate share of the loads in Table I.
5.1.3 Cargo bed tiedown provisions.	5.3.1 Class 4 cargo tiedown provisions.	The description of the directional capabilities has been reworded in 209J for clarity and better understanding.
5.3.2 Flatbed/flatrack and large cargo tiedown provisions.	5.3.2 Class 5 cargo tiedown provisions.	The directional requirements of flatbed/flatrack provisions have been reworded for clarity and ease of understanding. These same requirements apply to large cargo tiedowns.
5.5.1.a	5.5.1.a	The requirement for a CAD structural analysis was added to 209J. Either the contractor or MTMCTEA will perform this analysis. In cases where the structural analysis shows that the provisions will clearly pass testing, testing will not be required. In cases where the structural analysis shows that the provisions will marginally pass or fail the test, redesign or testing will be recommended.
5.5.2.a	5.5.2.a	The requirement that the contractor supply either detailed drawings of the equipment, CAE models, or results of their own structural analysis was added to 209J.
5.5.2.b	None.	The details of the CAE structural analysis are provided in this paragraph.
5.5.2.c(2)	5.5.2.b(2)	The requirement that the equipment be tested using a container spreader bar, if evaluations show that the provisions may fail when lifted this way, was added to 209J. The lifting provisions must be able to be used with an equal length sling assembly and with a container spreader bar (and everything in between).
5.5.3.a	5.5.3.a	The requirement that the contractor supply either detailed drawings of the equipment, CAE

		models, or results of their own structural analysis was added to 209J.
5.5.3.b	None.	The details of the CAE structural analysis are provided in this paragraph.
5.5.5.a	5.5.5.a	The requirement that the contractor supply either detailed drawings of the equipment, CAE models, or results of their own structural analysis was added to 209J.
5.5.5.b	None.	The details of the CAE structural analysis are provided in this paragraph.
5.6.1 Shipping dataplate.	5.6.1 Shipping dataplate.	The shipping dataplate must conform to A-A50271. The specifications called out in 209H, MIL-P-514 and MIL-P-15024/9, are no longer valid.
6.8 Tailoring.	None.	209J includes information to help PMs in tailoring this standard for their specific piece of equipment.

Summary of MIL-STD-209J Change Notice 1

Paragraph #	
Reason for Change	
Paragraph 4.1.3	Hard points used for type II equipment must be approved by MTMCTEA.
Paragraph 4.2	After rounding or chamfering, the resulting cross-section of tiedown provisions must be less than 2-inches in diameter.
Paragraph 4.3	Shackles are allowed if they are alloy bolt pin anchor shackles and the nut is secured by welding.
Paragraph 5.6.2	"letters" changed to "characters."
Figure 5	Column Emax was removed from figure 5, <i>Lifting, Equipment Tiedown, Multipurpose and Large Ca. Tiedown Provision Openings and Clearance Dimensions</i> .
n/a	Two pages of the table on contents have been changed to reflect the above changes added to the document.